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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,217	04/19/2004	Tony Quisenberry	27889-00072USPT	2926

7590

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EXAMINER

MCKINNON, TERRELL L

ART UNIT

PAPER NUMBER

3753

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/827,217

Applicant(s)

QUISENBERRY ET AL.

Examiner

Terrell L. Mckinnon

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12 and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/26/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12-9-05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 10 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akachi (U.S. 6,026,890) in view of Kato et al. (U.S. 4,830,100).

Akachi's invention discloses low-profile heat transfer device all of the claimed limitations from above except for a generally planar portion for positioning substantially near the at least one heat generating component; a low-profile extrusion having an inner and outer external surface and having a first sealed end and a second sealed end, the low-profile extrusion being curved upon itself into a generally toroidal shape such that the second sealed end is disposed generally opposite the first sealed end; wherein the first sealed end and the second sealed end are oriented opposite from the generally planar portion; and a fin structure extends along a portion of the low-profile extrusion excluding the generally planar portion.

3. However, Kato teaches the use of a low-profile multi-channeled heat pipe, wherein an inner and outer external surface and having a first sealed end and a second sealed end; a generally planar portion for positioning substantially near the at least one heat generating component; the low-profile extrusion being curved upon itself into a

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generally toroidal shape such that the second sealed end is disposed generally opposite the first sealed end; a generally planar portion for positioning substantially near at least one heat generating element (obvious modification based on Kato's figs. 2, 4, 7, 9, 13-15 and 17); wherein the first sealed end and the second sealed end are oriented opposite from the generally planar portion; and the fin structure extends along a portion of the low-profile extrusion excluding the generally planar portion.

Given the teachings of Kato, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the low-profile heat transfer device of Akachi with an inner and outer external surface and having a first sealed end and a second sealed end, the low-profile extrusion being curved upon itself into a generally toroidal shape such that the second sealed end is disposed generally opposite the first sealed end; wherein the first sealed end and the second sealed end are oriented opposite from a generally planar portion; a generally planar portion for positioning substantially near at least one heat generating element; and the fin structure extends along a portion of the low-profile extrusion excluding the generally planar portion.

Doing so would provide an alternate arrangement for joining the sealed ends and efficiently cooling heat-generating devices.

4. Claims 2, 4, 7-9 and 11-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Akachi (U.S. 6,026,890) in view of Kato et al. (U.S. 4,830,100) as applied to claims above, and further in view of Li (U.S. 6,315,033).

Akachi's invention, as modified by Kato, discloses all of the claimed limitations from above except for a spring structure abutting the fin; the fin structure extends along

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at least a portion of an interior surface of the low-profile extrusion; the fin structure is formed of a single extrusion; the fin structure extends across the first sealed end and the second sealed end of the low-profile extension; drawing air comprises pushing and /or pulling air through the generally toroidally-shaped heat pipe.

5. However, teaches Li teaches a heat dissipating device comprising a spring structure abutting the fin; the fin structure extends along at least a portion of an interior surface of the low-profile extrusion; the fin structure is formed of a single extrusion; the fin structure extends across the first sealed end and the second sealed end of the low-profile extension; drawing air comprises pushing and/or pulling air through the generally toroidally-shaped heat pipe.

Given the teachings of Li, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the low-profile heat pipe of Akachi with a spring structure abutting the fin; the fin structure extends along at least a portion of an interior surface of the low-profile extrusion; the fin structure is formed of a single extrusion; the fin structure extends across the first sealed end and the second sealed end of the low-profile extension; drawing air comprises pushing and /or pulling air through the generally toroidally-shaped heat pipe.

Doing so would provide an efficient securing means for thermally connecting the heat sink with a heat-generating device.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L. Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Blau can be reached on 571-272-4406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Terrell L Mckinnon
Primary Examiner
Art Unit 3753
February 6, 2006